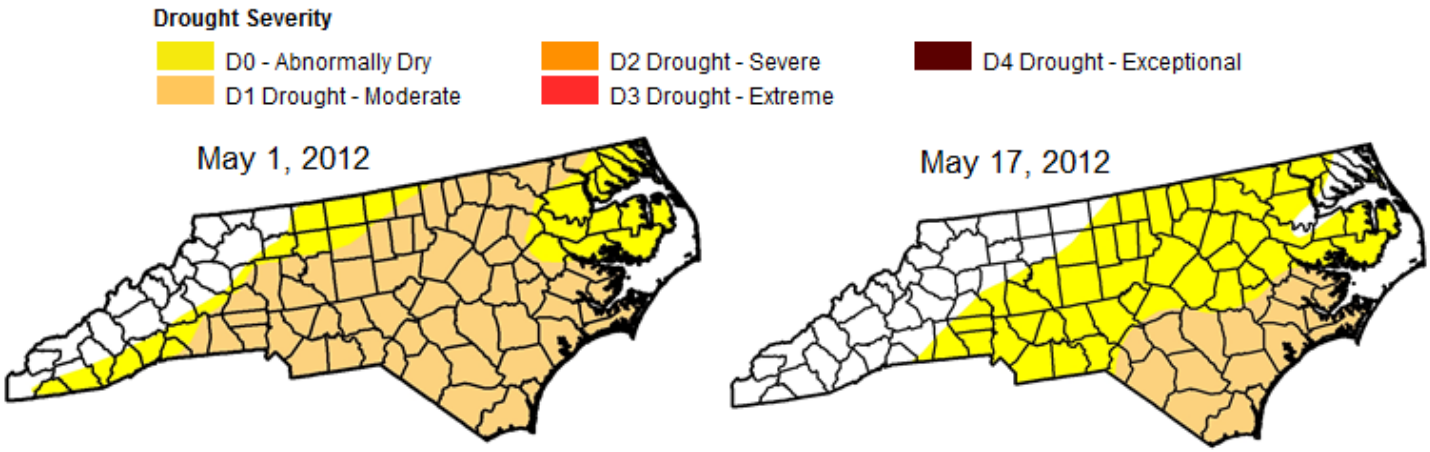
May Rainfall Provides Some Drought Relief

Drought update 5/17/2012

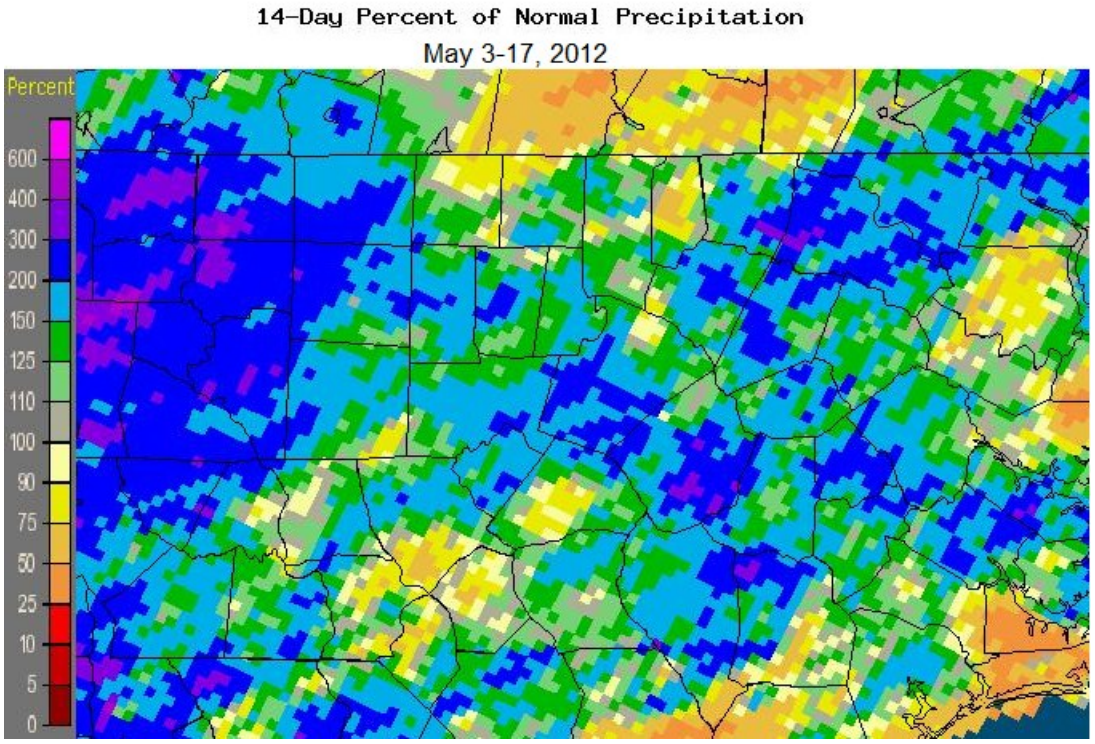
There has been a slowly developing rainfall deficit across central North Carolina from winter through early spring. Rainfall from January through April was below normal, but still adequate for water supply and agricultural demand. This resulted in widespread moderate drought designation across central NC (Fig 1—May 1, 2012), which may have seemed puzzling to the casual observer due to largely unseen impacts on groundwater and streamflows.



Week	Nothing	D0-D4	D1-D4	D2-D4	D3-D4	D4
May 1, 2012	15.52	84.48	62.58	0.00	0.00	0.00
May 17, 2012	29.20	70.80	22.69	0.00	0.00	0.00

Fig 1—NC Drought Status Change in May, 2012

There was a change to a cooler, wetter weather pattern in early May, and the area has benefitted from more frequent and widespread shower activity (Fig 2 at right).



While our long-term rainfall deficit still lingers (Fig 3), this recent rain did replenish stream-flows and top off water supply reservoirs. There is sufficient water supply in the major lakes, Lake Jordan and Falls Lake, to last through late summer, even if we receive as little as half our normal rainfall through the period.

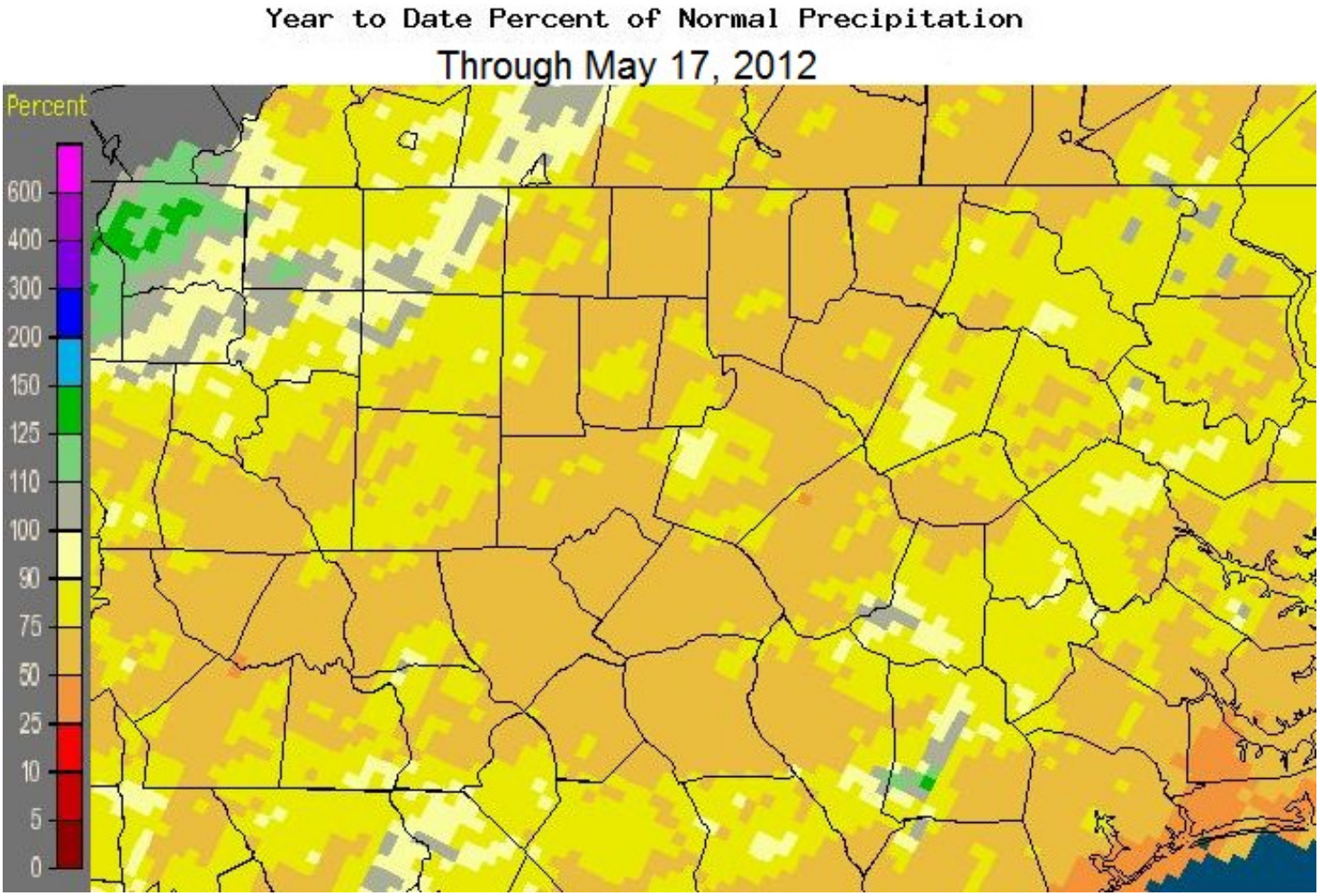


Fig 3—percent of normal rainfall for 2012 to date

Accordingly, there was significant improvement in drought status across the area, with most of the area having been downgraded to abnormally dry by U.S. Drought monitor (Fig 1—May 17, 2012).

While there is no immediate threat, the long term deficit is worrisome, as it implies a deeper groundwater deficit which is reflected in lower water levels in monitored wells. In addition, the base flow into streams, which maintains the flow during dry periods, is also low, evidenced by a rapid re-turn to low water levels once surface rainfall runoff tapers off. There is no climatological signal that gives us confidence in predicting rainfall frequency this summer. As summer approaches, North Car-olina's rainfall becomes more dependent on daily shower and thunderstorm activity, which can only be forecast a few days in advance. With little guidance to go on, drought conditions will have to be monitored closely, as conditions could worsen rapidly once we start seeing temperatures climbing into the 90s, which greatly increases evaporation.